

STATE OF SOUTH CAROLINA
BEFORE THE PUBLIC SERVICE COMMISSION
DOCKET NO. 2017-245-E

In the Matter of:

**Application of Duke Energy
Progress, LLC for Approval of
Rider DSM/EE-9**

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)
) **COMMENTS OF SOUTHERN**
) **ALLIANCE FOR CLEAN ENERGY**
) **AND THE SOUTH CAROLINA**
) **COASTAL CONSERVATION**
) **LEAGUE**
)

The Southern Alliance for Clean Energy (“SACE”) and the South Carolina Coastal Conservation League (“CCL”) (collectively, “Petitioners”) hereby submit the following comments on Duke Energy Progress, LLC’s (“DEP” or “the Company”) application for approval of an annual rider to recover certain costs, lost revenues and incentives associated with its demand-side management (“DSM”) and energy efficiency (“EE”) programs. DEP seeks to recover, through its proposed DSM/EE rider (“Rider 9”), DSM and EE costs incurred from January 1, 2016 through December 31, 2016, and projected costs covering January 1, 2018 through December 31, 2018.

INTRODUCTION

Petitioners generally support the application for approval of Rider 9, but are discouraged by the sharp decrease in DEP’s energy savings. The Company’s DSM/EE portfolio achieved savings of 0.85% of prior-year retail sales in 2016, a sharp drop from its 2015 energy savings of 0.93%. Furthermore, DEP projects that energy savings will stagnate in 2017 and decrease even more in 2018. Although DEP has done a commendable job of maintaining a cost-effective portfolio, it has either underutilized or ignored valuable opportunities to increase energy savings and reduce energy costs for its customers.

Overall, the Company is not on track to meet either the annual or cumulative savings targets that it agreed to in connection with the Duke Energy-Progress Energy merger, and the gap between the portfolio's energy savings and the merger targets is only projected to widen in the future. In light of this widening gap, DEP should investigate and implement program improvements and increase the savings that participants achieve. Petitioners' comments will discuss the following topics:

- 1) DEP's 2016 energy savings achievements and projections for the near term;
- 2) Opportunities for DEP to increase cost-effective energy savings;
- 3) Recommendations for improving DEP's low to moderate income ("LMI") programs;
- 4) The prevalence of opt-outs among eligible non-residential customers and recommendations for increasing participation in this sector; and
- 5) The benefits of Advanced Metering Infrastructure ("AMI") and recommendations for DEP to consider should it pursue wide deployment of AMI technology.

Petitioners are eager to continue working with DEP, the South Carolina Office of Regulatory Staff, and other stakeholders to ensure that the Company's programs continue to save energy and money for South Carolinians.

DEP'S ENERGY SAVINGS ACHIEVEMENTS AND PROJECTIONS

I. The Performance of DEP's DSM/EE Portfolio is Declining.

DEP reported 398.6 gigawatt-hours ("GWh") in savings from energy efficiency and demand side management programs in 2016, a 9.7% decrease from the 442 GWh of savings the Company verified for 2015. Following a period of sustained growth, DEP's

energy savings dropped from 0.93% of prior-year retail sales in 2015 to 0.85% of prior-year retail sales in 2016. DEP's annual incremental energy savings are shown below in Table 1.

Table 1: 2013-2018 DEP DSM/EE Annual Incremental Energy Savings¹

Year	Demand Reduction (MW)	Energy Savings (GWh)	Savings as a % of Prior Year Sales ²
2013 actual	339	186	0.40%
2014 actual	430	362	0.79%
2015 actual	421	442	0.93%
2016 actual	396	399	0.85%
2017 forecast	427	400	0.86%
2018 forecast	426	374	0.81%

DEP's savings are forecast to decline by nearly 7% to 374 GWh in 2018. The trajectory of DEP's savings achievements from 2010 to the present, along with its projections for 2017 and 2018, is shown below in Figure 1.

¹ Docket No. 2017-245-E, Exhibit 7.

² Net energy savings as a percentage of prior-year retail sales are calculated by SACE based on the Company's 2014 and 2015 reported net savings at the generator, an approximate estimated average line loss of 7%, and 2013 and 2014 estimated retail sales from the Company's 2015 IRP filing, provided in NCUC Docket No. E-100, Sub 141. For example, for 2016, the Company reported 398.6 GWh in net energy savings at the generator. Adjusting for line losses of 7%, this is 370.7 GWh in net energy savings at the meter. Given a prior-year retail sales estimate of 43,574 GWh, this equates to a savings of 0.85% of prior-year retail sales in 2016.

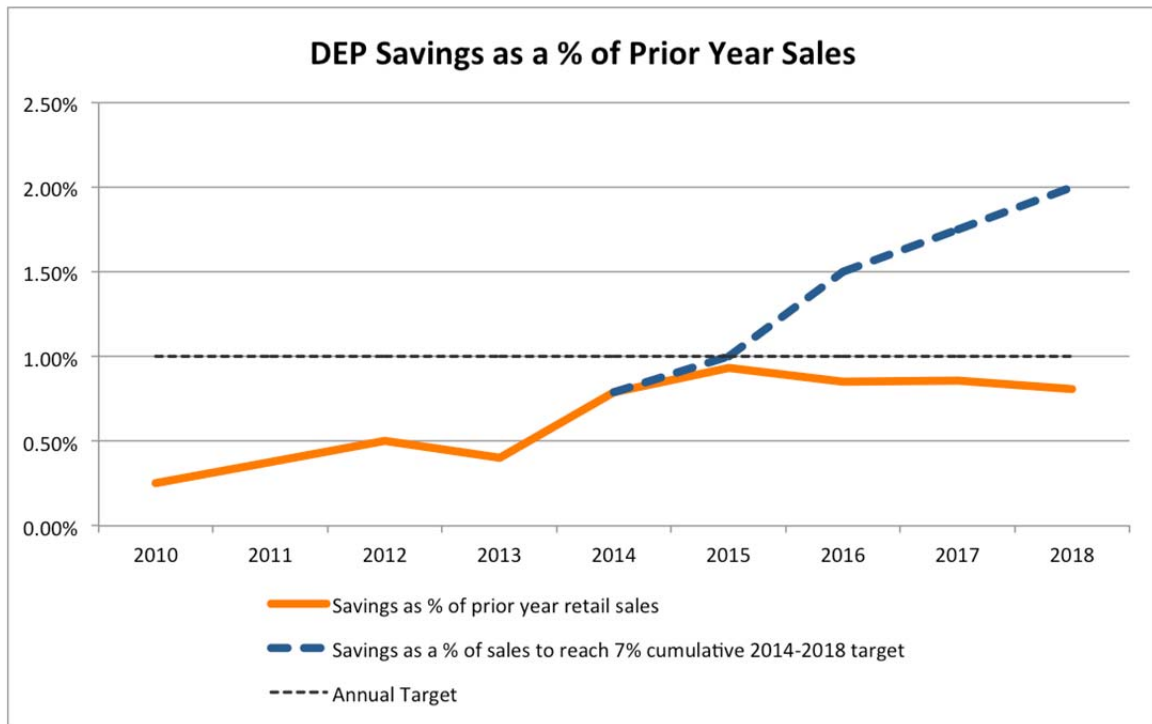


Figure 1: Duke Energy Progress Savings as a Percent of Prior-Year Retail Sales³

II. DEP's Actual and Projected Energy Savings Fall Short of the Targets Set Forth in the Merger Settlement.

DEP's actual and projected energy savings lag far behind the system-wide energy efficiency savings targets that the Company agreed to in a settlement agreement with SACE and CCL, as well as the Environmental Defense Fund, in connection with the then-proposed merger of Duke Energy and Progress Energy ("Merger Settlement").⁴ The Merger Settlement calls for annual energy savings of at least 1% of prior-year retail sales beginning in 2015, with cumulative savings of at least 7% over the period from 2014 through 2018. DEP was close to achieving the 1% savings target in 2015, but 2016 actual savings and projected values for 2017 and 2018 fall far short of the agreed-upon targets,

³ See note 1. Annual sales for 2009-2016 and 2018 sales projection from DEP 2017 Integrated Resource Plan Update and 2017 REPS Compliance Plan, Docket No. E-100, Sub 147 at Table 5B, 5E; 2017 sales projection is the average of 2016 and 2018 for lack of a DEP projection.

⁴ The Merger Settlement was approved by the Public Service Commission of South Carolina in Docket No. 2011-158-E.

as illustrated above in Figure 1. That gap will continue to increase each year that DEP misses the annual 1% target, and based on projections, the Company will not attain the cumulative savings target of 7% from 2014 to 2018.

III. DEP's Energy Savings Continue to Be Outperformed by National Leaders.

While DEP has reported higher energy savings in recent years than most other utilities in the Southeast, it still lags behind the leading Southeast utilities.⁵ The Southeast is currently led by Entergy Arkansas, which became the first utility in the region to achieve energy savings representing roughly 1.00% of prior-year retail sales in 2014.⁶ Energy savings from DEP programs remain among the highest in the Southeast, below only Entergy, and Duke Energy Carolinas (“DEC”), which achieved savings of 0.97% prior year sales in 2016, as shown in Figure 2.

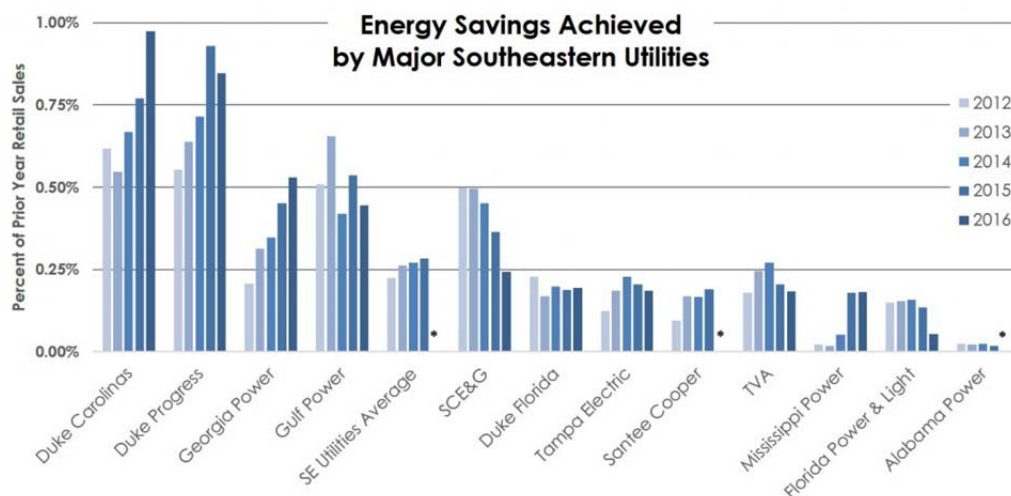


Figure 2: Energy Savings Achieved by Major Southeastern Utilities 2012-2016.⁷

⁵ Relf, Grace, et. al., ACEEE, 2017 Utility Energy Efficiency Scorecard at 17, Table 6 (2017), available at <http://aceee.org/research-report/u1707>.

⁶ Entergy Arkansas savings represent net savings as a percent of prior-year sales, calculated based on savings data from Entergy Arkansas, 2014 Program Year Evaluation, Arkansas Public Service Commission Docket No. 07-085-TF, and sales data from the U.S. Energy Information Administration, EIA-861.

⁷ SACE compiles utility data filed in regulatory proceedings and with the Energy Information Administration to report the annual energy efficiency savings using percent of prior year retail sales, a

Although DEP's energy efficiency program performance stacks up well against most utilities in the Southeast, it still trails far behind national leaders. ACEEE recently produced its first scorecard ranking the energy efficiency programs of the 51 largest utilities in the United States.⁸ In terms of energy efficiency program performance, DEP was ranked only 33rd out of the 51 utilities that ACEEE examined. This ranking shows that there is room for the Company to improve its energy efficiency efforts and achieve greater savings for its customers.

IV. Duke's 2016 Market Potential Study Supports DEP's Ability to Achieve 1% Annual Savings.

In 2016, Duke Energy retained Nexant, Inc. to determine the potential energy and demand savings that could be achieved by DSM and EE programs in the DEP and DEC service territories. Nexant provided a market potential study, which estimates the technical, economic and "realistic achievable" potential for both demand and energy savings over the short term (five years), intermediate term (10 years), and long term (25 years).⁹ In developing its study, Nexant first estimated the technical potential of DSM and EE in DEP's South Carolina service territory. After it developed the estimates of technical potential, Nexant applied the Total Resource Cost ("TRC") cost-effectiveness test to determine the "economic potential." Finally, Nexant developed estimates of "achievable" program potential based on regulatory, policy and market conditions, as well as "real-world" constraints such as program budgets and effectiveness of outreach.

commonly used regulatory benchmark. An asterisk represents data not yet available from the Energy Information Administration.

⁸ Relf, Grace, et. al., ACEEE, 2017 Utility Energy Efficiency Scorecard at 17, Table 6 (2017), *available at* <http://aceee.org/research-report/u1707>. To determine its rankings, ACEEE awarded points in the following categories: Incremental Savings, Spending, Peak Demand Reduction, Lifetime Energy Savings, and Progress toward 2015 Goal. Incremental savings received the highest weighting. Of the 25 total possible points for energy efficiency program performance, the Company earned only six, or 24% of the possible points, compared with 26% for DEC and 40% for Entergy Arkansas.

⁹ Attachment A, Nexant, Duke Energy South Carolina DSM Market Potential Study (Dec. 19, 2016).

It is troubling that Duke did not solicit stakeholder feedback on the potential study before or during the study's development—via its Carolinas Energy Efficiency Collaborative or otherwise. Market potential studies can provide useful information to guide DSM/EE portfolio planning, like other critical utility planning exercises such as integrated resource plans (“IRPs”); however, as with IRPs, meaningful stakeholder input will result in a more robust and actionable potential study that has greater credibility with stakeholders. Without a clear window into the details of how the study was performed, CCL and SACE are unable to assess the validity of the study approach and results (the mostly high-level methodological descriptions included in the report provide an incomplete picture at best).

Taking the results at face value, however, DEP's 2016 market potential study shows that DEP can achieve the agreed-upon 1% annual savings in the residential sector. The study estimates a residential program potential of 5.0% savings of the residential load under a 5-year base scenario, and an enhanced scenario of 6.3% savings.¹⁰ The vast majority of these savings would be obtained through measures that reduce the energy needed for residential space cooling, heating and hot water. This highlights the need for DEP to greatly increase its emphasis on comprehensive programs that include these measures, which will be detailed later in the recommendations section.

The study identifies much lower potential savings for the non-residential sector, at only 1.8% of non-residential load for the first five years of the study period in the base scenario, and 3.1% in the enhanced scenario. However, there are at least two assumptions regarding customer opt-outs that could cause significant under-estimation of the non-residential savings potential. The first is the assumption that the opt-out level remains

¹⁰ Market Potential Study, *supra* note 5 at 105.

steady throughout the five-year period. In other words, the study assumes that DEP will not succeed in increasing the number of customers who choose to opt in to the Company's DSM/EE programs and rider. This assumption is flawed in light of the success that other program administrators have had in engaging opt-out-eligible customers.

The study also incorrectly assumes that the remaining opted-in customers will not participate in programs at higher rates than the general population of eligible customers would. This assumption results in an underestimation of the savings that can be achieved in the large and industrial sector. Given the ease with which these customers can opt out, it only makes sense for them to remain opted-in if they intend to participate in DEP's programs. Therefore, the potential study should instead assume much higher participation rates for opted-in customers.

Based on the market potential study, there is no reason that DEP cannot save energy at the levels of leading utilities. When the study determines "program potential," defined as "the realistic quantity of energy savings the utility can realize," it makes many assumptions about program performance. Regarding the accuracy of the industry's projections of achievable potential, the Regulatory Assistance Project states that "[o]ther factors, such as effective program design and the strength of motivation on the part of the utility, can significantly influence what level of savings will ultimately be realized."¹¹ High-performing programs can outperform program potential, and there is no immediate explanation for why DEP could not improve its performance and achieve cost-effective savings at the agreed-upon 1% of prior-year retail sales level.

¹¹ Kramer, Chris and Reed, Glenn, The Regulatory Assistance Project, *Ten Pitfalls of Potential Studies* at 5 (2012), available at <http://www.raponline.org/wp-content/uploads/2016/05/energyfutures-kramerreed-tenpitfallsesdraft2-2012-oct-24.pdf>.

DSM/EE PROGRAM REVIEW

I. The bulk of DEP's residential savings result from lighting measures and its behavioral program.

Based on the net energy savings for 2016, it appears that the Company acquired the majority of its residential savings through energy efficient lighting and through the behavioral My Home Energy Report ("MyHER") program. The savings from most programs either remained flat or declined and overall, DEP's residential portfolio produced a 12.9% decrease in savings from the previous year. Savings from DEP's residential programs are shown in Table 2 and Figure 3, below.

Table 2: Net Energy Savings by Program (GWh)¹² and Year-over-Year Change

Program Name	Savings (GWh)		Change 2015-2016		2016 % of Portfolio
	2015	2016	GWh	%	
My Home Energy Report	132.3	128.3	(4.0)	(3.0%)	32.2%
Energy Efficient Lighting	87.1	41.6	(45.5)	(52.2%)	10.4%
Save Energy and Water Kit	0.0	16.2	16.2	N/A	4.1%
Multi-Family Energy Efficiency	17.6	13.4	(4.2)	(24.0%)	3.4%
Residential New Construction	5.6	11.1	5.5	99.4%	2.8%
Home Energy Improvement Program	6.1	6.3	0.2	3.6%	1.6%
Residential Energy Assessment	0	4.1	4.1	N/A	1.0%
Energy Education for Schools	2.3	2.2	(0.1)	(1.8%)	0.6%
Neighborhood Energy Saver Program	3.6	2.0	(1.6)	(44.8%)	0.5%
Appliance Recycling	4.4	0.2	(4.2)	(95.3%)	0.1%
Residential Total	259.0	225.5	(33.5)	(12.9%)	56.6%
Energy Efficiency for Business	57.4	71.2	0.8	1.4%	17.9%
Small Business Energy Saver	42.3	50.3	4.2	11.1%	12.6%
Non-Residential Lighting Program	41.8	12.2	(20.8)	(33.2%)	3.1%
Business Energy Report	0.0	4.5	(4.5)	N/A	1.1%
EnergyWise for Business	0	1.1	0	0.0%	0.3%
Non-Residential Total	141.5	157.3	(15.8)	(10%)	34.9%
DSDR	42.0	33.9	2.5	6.2%	8.5%
TOTAL ALL PROGRAMS	442.5	398.6	(43.9)	(9.9%)	-

¹² Docket No. 2017-245-E, Exhibit 7.

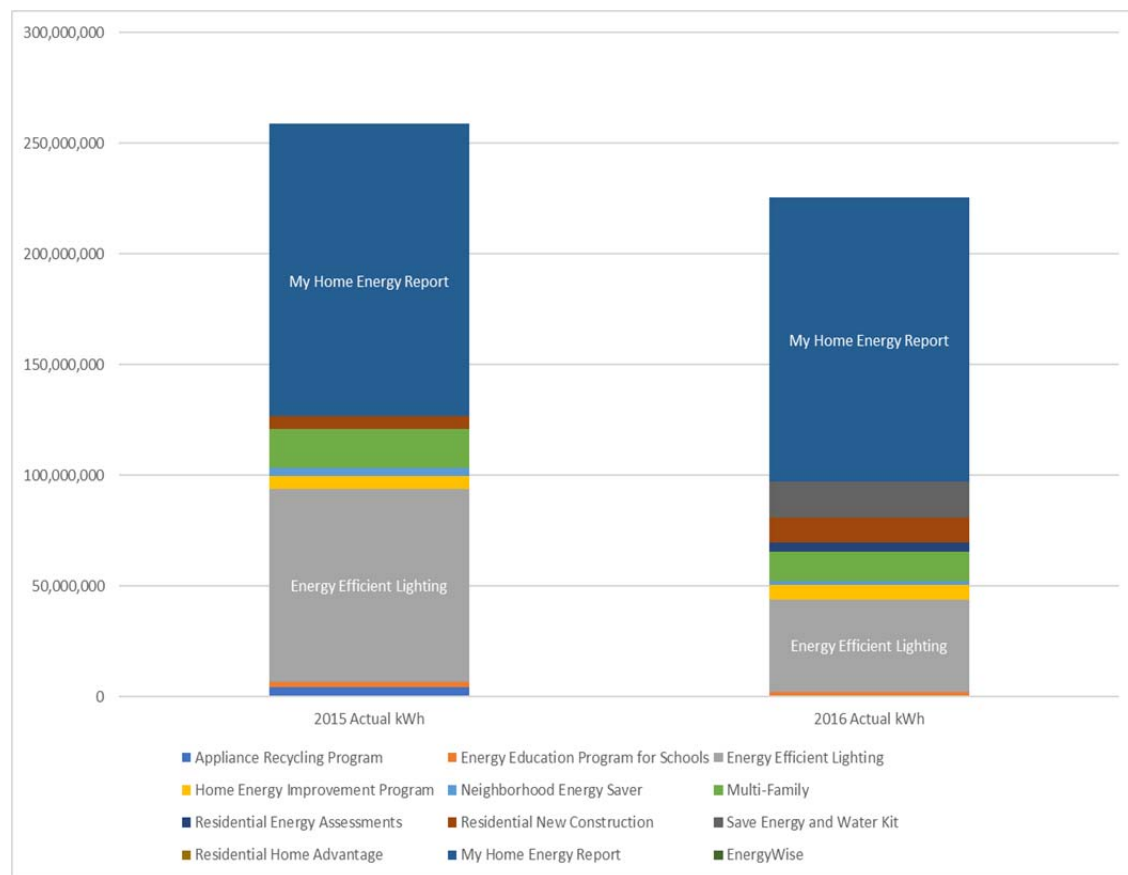


Figure 3: Comparison of 2015 and 2016 Residential Program Savings¹³

The behavior-based MyHER program ended the year with 128.3 GWh in energy savings¹⁴, accounting for approximately 32.2% of DEP's overall 2016 energy savings. The program has historically had high participation and held strong in this program year. Many programs showed modest to dramatic decreases in terms of savings from 2015 to 2016, but MyHER maintained a high level of performance with only a 3% decrease in energy savings. The Company should use the MyHER program as an opportunity to encourage customers to participate in other EE and DSM programs with deeper and longer-lasting savings, like the Home Energy Improvement Program.

¹³ N.C. Utilities Commission ("NCUC") Docket No. E-2, Sub 1145, DEP response to SACE Data Request No.1, Item No. 1-1, DEP v2015 Exhibit 8 and DEP v2016 Exhibit 8.

¹⁴ Docket No. 2017-245-E, Exhibit 7.

The second largest driver in the portfolio is the Energy Efficient Lighting Program, which achieved 41.6 GWh in energy savings in 2016. Although the program was responsible for yielding 10.4% of DEP's overall portfolio savings, it experienced a 52.5% decline in savings and was responsible for the majority of the decrease in savings from 2015 to 2016. As reported in the Company's most recent EM&V report for Program Year 2014, these declines are largely due to market saturation as more buildings have upgraded lighting to CFL and LED bulbs.

As illustrated above, the vast majority of DEP's residential energy savings come from the MyHER and Energy Efficient Lighting programs. While the success of these programs is impressive, DEP should not overly rely on them to achieve savings. Energy savings from behavioral programs often have low retention life (one to three years),¹⁵ and the savings from MyHER will likely decrease over time. The importance of capturing longer-lived measures and promoting greater participation in more comprehensive programs is underscored by the fact that a significant fraction of the savings in several of DEP's other programs—including the Energy Efficiency Education, Residential Energy Assessments, and Multifamily Energy Efficiency programs—is likely to also come from efficient lighting. Additionally, major non-residential programs such as Energy Efficiency for Business are dominated by lighting measures. For example, in 2016, 80% of Energy Efficiency for Business program savings came from efficient lighting.¹⁶

¹⁵ Skumatz Economic Research Associates, Inc., Measuring the Impacts of Behavior Change Programs: Filling in the Blanks (2012), *available at* <http://aceee.org/files/proceedings/2012/data/papers/0193-000123.pdf>.

¹⁶ Response to SACE and CCL First Data Request to DEP, DR 1-4, in Docket No. 2017-245-E.

II. The Rate of Industrial and Large Commercial Customers Opting out of DEP's DSM/EE Programs and Rider Is High and Continues to Rise.

Petitioners are concerned about the prevalence and implications of opt-outs among DEP's non-residential customers. The total volume of opt-out customer sales is high and continuously increasing. As shown in Table 3, below, opt-out customers accounted for more than 2,731 GWh of sales in 2016. This is alarming because the industrial and large commercial customer classes are energy-intensive sectors and therefore represent a large energy efficiency resource opportunity that the Company is not tapping. Since efficiency reduces costs for everyone, even non-participants, failure to capture this resource opportunity increases system costs for all classes of customers.

Table 3: Change in DEP South Carolina Opt-Out Sales (GWh)

	2013¹⁷	2014¹⁸	2015¹⁹	2016²⁰
General Service	2,487.77	2,675.99	2,710.15	2,726.71
Lighting	3.89	4.24	4.37	4.43
Total	2,491.66	2,680.23	2,714.52	2,731.14

In addition, as the number of opt-out customers grows, the number of non-residential customers that are paying the DSM/EE rider will decline, spreading the costs across a dwindling base of customers. This, in turn, will increase the cost of the rider, likely resulting in more opt-outs. DEP must prevent such a downward spiral by modifying its non-residential programs to better incentivize high participation rates and energy efficiency investment from this energy-intensive sector. By better aligning its incentives with the customers' cost of participation in the DSM/EE rider, DEP can reduce the number of opt-outs and increase non-residential energy savings.

¹⁷ Docket No. 2014-89-E, Evans Exhibit 3 at 1.

¹⁸ Docket No. 2015-323-E, Miller Exhibit 4 at 1.

¹⁹ Docket No. 2016-289-E, Exhibit 5 at 3, 4.

²⁰ Docket No. 2017-245-E, Exhibit 5 at 3, 4.

III. DEP's DSM/EE Portfolio is Highly Cost-Effective.

DEP's South Carolina DSM/EE portfolio is projected to remain cost-effective in future years, as evidenced by the Company's projected TRC and Utility Cost Test ("UCT") scores for 2017 and 2018. DEP estimates that its overall portfolio TRC score will be 3.35 in 2017 and then fall to 2.45 in 2018. The UCT score is expected to rise slightly from 2.91 in 2017 to 2.99 in 2018.²¹ The results of DEP's cost-effectiveness evaluation using the TRC and UCT test are presented in Table 4, below.²²

Table 4: Vintage 2017/2018 Projected DEP SC DSM/EE Program TRC and UCT Scores

Program Name	2017 ²³		2018 ²⁴	
	TRC	UCT	TRC	UCT
Appliance Recycling Program	2.02	1.40	1.43	1.07
Energy Education for Schools	1.67	1.22	1.62	1.15
Energy Efficient Lighting (Residential)	4.21	3.38	4.09	2.36
Home Energy Improvement Program	0.57	0.97	0.67	0.91
Multi-Family	3.79	2.64	6.19	3.39
Neighborhood Energy Saver Program	2.28	0.61	1.60	0.57
Residential Energy Assessment	2.46	2.18	2.53	2.23
Residential New Construction	1.36	1.26	1.26	2.27
Save Energy and Water Kit	16.21	8.36	19.61	7.77
My Home Energy Report	1.29	1.29	1.42	1.42
EnergyWise	60.76	11.00	94.65	10.06
Business Energy Report	1.24	1.24	1.19	2.64
Energy Efficiency for Business	1.91	3.83	0.98	3.94
Non-Residential Lighting Programs	6.37	5.14	10.61	6.13
Small Business Energy Saver	6.62	2.86	2.0	3.13
EnergyWise for Business	2.11	1.49	2.32	1.80
CIG Demand Response	47.30	2.94	4.33	2.67
Portfolio Score	3.35	2.91	2.45	2.99

²¹ NCUC Docket No. 2017-E-2, Sub 1145, Evans Exhibit 7.

²² In its current DSM/EE rider application, the Company changed its cost-effectiveness calculation methodology. Prior to the 2016 filing, the Company used system-wide avoided costs; in the current filing, it uses South Carolina-specific avoided cost calculations. Therefore, the 2017 projected TRC and UCT scores can not be directly compared to prior years.

²³ Docket No. 2016-289-E, Exhibit 15.

²⁴ NCUC Docket E-2, Sub 1145, Evans Exhibit 7.

It is also important to consider program and portfolio cost-effectiveness from the standpoint of net benefits. By definition, “cost-effective” means that the benefits (that is, the avoided cost savings) of the programs exceed the costs. As indicated by the UCT net benefits shown in Table 5, below, DEP’s efficiency and DSM programs have produced net system cost savings of hundreds of millions of dollars just in the last three years.²⁵

**Table 5: Net System Cost Savings of DEP’s Programs
(UCT Net Benefits in \$M)**

Program	2014	2015	2016
Appliance Recycling Program	\$0.48	\$0.29	\$0.21
Energy Education Program for Schools	-	\$0.32	\$0.24
Energy Efficient Lighting	\$25.40	\$21.30	\$18.38
Home Energy Improvement Program	\$0.94	\$1.56	\$0.97
Multi-Family	-	\$6.45	\$4.78
Neighborhood Energy Saver	(\$0.88)	(\$0.45)	(\$0.87)
Residential Energy Assessments	-	-	\$2.38
Residential New Construction	\$3.50	\$2.73	\$11.89
Save Energy and Water Kit	-	-	\$9.24
Residential Energy Efficient Benchmarking	\$0.88	-	-
My Home Energy Report	(\$0.07)	\$1.92	\$4.74
EnergyWise	\$38.24	\$27.41	\$64.05
Business Energy Report	-	(\$0.07)	\$0.24
Energy Efficiency for Business	\$28.02	\$23.68	\$33.62
Non-Residential Lighting Program	\$7.42	\$9.78	\$8.95
Small Business Energy Saver	\$13.87	\$15.46	\$23.78
EnergyWise for Business	-	(\$0.06)	(\$0.30)
CIG Demand Response	\$2.60	\$0.46	(\$10.68)
Full Portfolio	\$120.38	\$110.78	\$171.62

²⁵ DEP provided UCT costs and benefits for each program for 2014-2016 as part of its application in SC PSC Docket No. 2017-245-E, in Exhibit 7. These data are compiled, with cost-effectiveness score calculations, in Attachment B to these comments. The UCT, also referred to as the Program Administrator Cost Test, reflects the avoided supply costs and the utility’s cost to implement the program. A score of greater than 1 indicates that the program is cost-effective. “Net benefits” refers to program cost savings minus program costs. For example, during 2016, the Energy Efficiency for Business program cost DEP about \$14.1 million to implement and produced \$47.7 million in system cost savings on a present value basis, yielding a net benefit of \$33.6 million, as shown in Table 5. South Carolina ratepayers receive approximately 14% of DEP system net benefits, based on the jurisdictional allocation between NC and SC.

CCL and SACE support the energy savings and system cost reductions that have been achieved by the Company's programs; however, sound utility management and regulatory practice require expansion of programs that reduce costs and help all ratepayers lower their bills.

DSM/EE PROGRAM RECOMMENDATIONS

I. DEP Should Increase Its Focus On Programs That Provide More Comprehensive and Longer-Lasting Savings.

DEP should increase its focus on programs that provide longer-lasting savings and greater savings for each customer. Currently, as noted above, DEP is achieving the bulk of its residential energy savings from lighting measures and its behavioral program, which have a low retention life and produce decreased savings over time. The Company should increase its emphasis on more comprehensive programs that promote building shell and HVAC system improvements, which yield deep and long-lasting energy savings. With a residential customer base of over 1.2 million, DEP is reaching just 1% of the homes in its service territory per year with its Home Energy Improvement Program, the only residential program that includes building shell and HVAC measures.²⁶

While longer-lived measures such as HVAC upgrades and building shell improvements may have higher initial costs, they often provide better returns on investment due to the fact that the savings persist for so much longer. Programs that focus on short duration measures with a low initial cost, such as lighting programs, are pursuing savings that are sometimes referred to as "low-hanging fruit." When the opportunity to

²⁶ In response to a data request, DEP provided the number of homes participating in its Home Energy Improvement Program in the last three years: 12,972 in 2014; 11,003 in 2015; and 11,757 in 2016. Response to SACE and CCL First Data Request to DEP, DR 1-2, Docket 2017-245-E.

pursue these “easy” savings has been exploited, it is often harder to engage customers in programs that require more effort or a higher level of investment.

Long-lasting and persistent savings are more likely to occur with a balanced portfolio that captures a mix of the “easy” savings to engage customers who are less inclined to pursue energy efficiency, with more comprehensive options for customers who are willing and able to pursue deeper savings opportunities. Furthermore, pursuit of a more diverse mix of building shell and HVAC measures in a program like HEIP could expand participation and savings, and potentially improve the cost-effectiveness of the program. In 2016 for instance, only 15% of savings in HEIP came from insulation, air sealing, and ductwork; the majority of the program’s savings came from heat pump and air conditioner replacements.²⁷

II. DEP Should Maximize Cross-Program Marketing

Educational and behavioral programs such as the Energy Efficiency Education Program, the My Home Energy Report Program, the Save Energy and Water Kit Program, and the Residential Energy Assessments Program should be used as opportunities to cross-promote comprehensive and long-lasting savings measures such as HVAC system improvements, insulation, duct sealing, and energy efficient appliances. An example of cross-promotion with DEP programs (illustrated below in Figure 4) would be to use the MyHER program to educate customers about their energy use as a first step in a continuous path towards greater energy efficiency. The next step in the process could be the Residential Energy Assessments (“REA”) program, to help customers identify areas for energy efficiency improvements. Finally, the HEIP program could help customers implement the energy-efficient upgrades identified by the REA program. This

²⁷ Response to SACE and CCL First Data Request to DEP, DR 1-3, Docket No. 2017-245-E.

approach would spread administrative and marketing costs across multiple programs, improve customer satisfaction, and deepen the energy savings achieved in each home.

Figure 4: Illustration of Steps in Cross-Participation Across Programs



Program cross-promotion is an essential element of a diversified portfolio. A balanced portfolio should have opportunities for customers to participate at the level at which they are ready or able to participate, but it should also provide ongoing engagement so that they know how, when, and where they can take additional steps to increase their energy savings. Providing that engagement at the time of initial customer engagement in an EE program takes advantage of the customer’s current interest, and demands less effort and cost from both the customer and the program, therefore making customer acquisition more efficient than engaging a customer when their interest is “cold.”

DEP currently does make some efforts to cross-promote its programs, but Petitioners strongly recommend that the Company redouble its efforts since it is not clear that these efforts are sufficient. In response to a data request regarding the Energy Efficiency Education Program, DEP reports that it “does promote other programs on

occasion and plans to do so in the future.”²⁸ Regarding the MyHER Program, DEP says that “MyHER promotes Smart Saver lighting programs and rebate programs, Home Energy House Call, Energy Wise Home, Contract Referrals and payment programs.”²⁹ However, the sample MyHER report provided by DEP in discovery only contains a reference to retail lighting discounts and a link to duke-energy.com/SavingTips.³⁰ While this is only one sample report, the lack of cross program marketing in this example suggests that DEP’s cross-promotion of programs is insufficient and must be improved.

DEP also reports that the REA Program “. . . cross promotes HEIP as well as Energy Efficiency Lighting during the assessment.”³¹ Because the REA program is in effect an audit program that provides energy savings kits and direct installation of low-cost measures, it is critical that the program promote participation in other programs. This is particularly true for the HEIP program, which provides the opportunity for customers to save large amounts of energy through building and equipment upgrades. The Petitioners recommend that DEP sharpen the focus of the REA Program such that its success is measured according to how many participants subsequently participate in the HEIP Program, and the amount of savings those customers achieve through non-lighting home improvements such as air sealing, insulation upgrades, and HVAC improvements.

III. DEP Should Procure an Alternate Vendor for Its Appliance Recycling Program to Avoid Further Unrealized Savings.

DEP’s failure to procure an alternate vendor for its Appliance Recycling program resulted in the loss of energy savings opportunities for its customers that could have been averted. DEP previously implemented an appliance recycling program that offered an

²⁸ NCUC Docket No. E-2, Sub 1145, DEP response to SACE Data Request No.1, Item No. 1-6-h.

²⁹ NCUC Docket No. E-2, Sub 1145, DEP response to SACE Data Request No.1, Item No. 1-9-b.

³⁰ NCUC Docket No. E-2, Sub 1145, DEP response to SACE Data Request No.1, Item No. 1-9-d.

³¹ NCUC Docket No. E-2, Sub 1145, DEP response to SACE Data Request No.1, Item No. 1-11-h.

incentive to customers who agreed to retire old, inefficient refrigerators. The appliances were dismantled and recycled, ensuring that they would not be resold and returned to use by other customers. This effectively guaranteed that the inefficient load was forever off the grid. The program was disrupted when Jaco, the program vendor, very suddenly ceased operations, which accounts for the 95.3% decrease in energy savings shown in Table 2.

It is understandable that DEP was unable to provide this program on a continuous basis given that its vendor went out of business. However, it is not clear why DEP did not procure an alternate vendor for the program so that its customers could continue to garner the benefits it provides. Jaco ceased operations in late November of 2015, nearly two full years ago. DEP has had sufficient time to procure an alternate vendor. For comparison, the New Jersey Clean Energy Program suspended its appliance recycling program in the late Fall of 2015 in response to Jaco's suspension of operations, and re-opened its recycling program with an alternate vendor in March of 2016.³²

Utilities in numerous other jurisdictions that faced the same program interruption have continued their appliance recycling programs with alternate vendors, including utilities in New Jersey, Maryland, Pennsylvania, Michigan, Georgia, Massachusetts, and Rhode Island.³³ This suggests that DEP could also procure a cost-effective alternate vendor in order to re-open this program and increase its savings achievements. The Petitioners recommend that DEP immediately procure an alternate vendor for its Appliance Recycling Program.

³² Personal communications with NJCEP program administrator.

³³ Personal communications with MA and RI consultant teams and ICF, International, Inc.

IV. DEP Should Take Steps to Encourage Participation of Customers Who Are Eligible to Opt Out.

DEP can and should take aggressive steps to encourage the participation of non-residential customers who are eligible to opt out of the DSM/EE programs and rider.

With customers that account for more than one half of non-residential sales electing not to participate in its DSM and EE programs, DEP will need to adopt new strategies to reverse the trend of increasing opt-outs. This can be done both by making sure that the available programs meet these customers' needs and by providing personalized outreach and engagement to ensure that customers are aware of available programs and how they can benefit from them. It is also important for the Commission to provide the Company with clear guidance for increasing and strengthening its engagement with opt out eligible customers.

It is critically important for program administrators to understand these customers' specific needs and design programs that meet them. Recent research by E Source profiled AEP Ohio's success in using an aggressive account management approach coupled with highly tailored and effective energy efficiency programs to keep large customers from opting out.³⁴ Strong account management was only one part of a comprehensive approach, however. AEP also had to re-design its programs to meet the needs of these customers.

Overall, this research indicates that many large utility customers will choose to participate in utility energy efficiency programs when programs are well-designed to meet the customers' unique needs and when the utilities invest in building strong,

³⁴ Andrews, Kevin and Doutre, Dan, ACEEE Summer Study on Energy Efficiency in Industry, Cracking the Code: Understanding Customer Perceptions and Utility Strategies for Large Customer Energy Efficiency Programs at 3-13 (2017), *available at* <http://aceee.org/files/proceedings/2017/data/index.html>).

ongoing relationships. Indeed, one of the most effective tools for countering opt outs is to make its programs as attractive as possible to opted in customers, and achieving very high participation and satisfaction rates among non-residential customers should make them more attractive to customers who have previously opted out.

V. DEP Should Maximize Opportunities to Save More Energy in Multifamily Housing Programs.

Petitioners appreciate that DEP continues to offer a multifamily program, as utilities in many jurisdictions do not provide sufficient efficiency opportunities for residential customers who live in multifamily housing. However, DEP could make adjustments to the program that would maximize its impact. For example, since the program is aimed only at the residential units in multifamily buildings,³⁵ available savings such as lighting in common areas, including hallways, lobbies, and the exterior, are not being pursued since they may be on commercial rather than residential meters.

Petitioners recommend that DEP seek ways to offer both a residential and commercial tariff for an individual multi-family building. This would require careful planning, and would likely require attention to reporting and cost accounting on DEP's part, but is done successfully in other jurisdictions. For example, PPL provides incentives for all eligible measures in a multifamily property regardless of the metering configuration. Indeed, coordinated program delivery to multifamily housing regardless of metering configuration is regarded as a best practice for overcoming the unique barriers that this market faces.

DEP may also consider establishing a single point of contact for property managers. For example, according to the ACEEE, "[i]nterviews with building owners and

³⁵ NCUC Docket No. E-2, Sub 1145, DEP response to SACE Data Request No.1, Item No. 1-8.

property managers in California have shown that a one-stop shop or single point of contact . . . helps owners navigate the often overlapping utility programs (commercial and residential, low-income or market-rate)”³⁶

Finally, DEP should take advantage of its engagement with multifamily property managers to identify and encourage the installation of additional, more comprehensive energy saving measures.

VI. DEP Should Add Complementary Low-Income Programs.

DEP should consider the benefits of adopting add-on programs to complement DEP’s current low-income offering, which currently consists of only the Neighborhood Energy Saver Program. There are several elements of this program that are worth appreciating, including its focus on determining eligibility by neighborhood rather than on a case-by-case basis. This is a highly practical and expedient method of addressing eligibility questions, which might otherwise become onerous for programs and participants alike. However, this program does not reach enough customers, and it does not save enough energy. Compared to leading utilities, DEP achieves only a very small percentage of its annual savings from low-income programs, as shown in Table 6, below.³⁷

³⁶ Johnson, Kate, ACEEE, Apartment Hunters: Programs Searching for Energy Savings in Multifamily Buildings at iii (Dec. 2013), *available at* <http://aceee.org/research-report/e13n>.

³⁷ Comments of Maryland Energy Efficiency Advocates on the EmPOWER Maryland Limited Income Work Group Summary Report (Apr. 15, 2016), Maryland Public Service Commission Maillog No. 188604.

Company		Program Year	Portfolio Savings (MWh)	LI Program Savings (MWh)	LI Savings as a % of Portfolio Savings
1	National Grid RI	2013	157,121	6,305	4.0%
2	National Grid MA	2009	189,004	7,238	3.8%
3	Eversource	2012	520,760	19,728	3.8%
4	Otter Tail	2007	9,533	356	3.7%
5	National Grid MA	2014	611,064	21,600	3.5%
6	DEP	2015	442,466	3,610	0.8%
7	DEP	2016	398,643	1,992	0.5%

Table 6: Low-Income Program Savings as a Percentage of Overall Portfolio Savings

Petitioners recommend that the Company add on to the existing federal Weatherization Assistance Program (“WAP”) in the following ways: (1) expanding customer eligibility; (2) providing direct installation of all cost-effective energy efficiency measures; (3) funding statewide implementation teams to alleviate any waiting periods at community action agencies; and, (4) offering all measures to renters with streamlined landlord approval.

In the case of add-on programs, the utility provides additional funding to extend the reach of pre-existing Weatherization Assistance Programs. This increases the number of households served by allowing the program to stretch its non-utility funding across more households. Furthermore, these programs are operationally efficient due to the elimination of redundant delivery mechanisms.

VII. DEP Should Explore Customer Benefits When Considering Advanced Metering Infrastructure.

As DEP contemplates the possibility of broadly deploying Advanced Metering Infrastructure (“AMI”) in its distribution system, it should fully explore the use of the technology to drive greater efficiency for its customers. DEP is currently assessing the

opportunity for deploying AMI technology across its service territory.³⁸ As of September 2016, DEP had installed just under 57,000 AMI meters system-wide.

DEP should explore the customer benefits associated with AMI. The technology is new enough that the EE and DSM benefits associated with it are still being studied, and there are indications that certain approaches to the use of AMI can help customers reduce energy use. For example, “smart” thermostats are available that utilities can use for direct load control during peak demand periods. These thermostats can also subtly modify temperature settings to reduce energy use and demand. In addition, AMI can be used in conjunction with web-based interfaces to provide customers with near real-time data on their energy use. When this usage data is accompanied by messaging from the utility, it can help customers moderate their energy usage.³⁹

Should DEP decide to launch a large-scale deployment of AMI, Petitioners recommend DEP that use the capabilities AMI provides to drive EE and DSM and program offerings and design for its customers. Some of the opportunities AMI provides—including those provided through the use of smart thermostats—could be appropriate for a new energy efficiency program offering. Several utilities, including Santee Cooper, Georgia Power, and Kansas City Power and Light, are now offering incentives for such thermostats, either through a specified brand or on a “bring your own”

³⁸ Supplemental Information, 2016 Smart Grid Technology Plans of Duke Energy Carolinas, LLC and DEP, NCUC Docket No. E-100, Sub 147 at cover letter.

³⁹ For example, Baltimore Gas and Electric Company’s (“BGE”) Smart Energy Manager® Program: “. . . uses a variety of channels (web, email, text, automated phone dialer, and paper reports) to help customers understand their energy usage and thereby encourage energy efficiency and conservation. Customers became eligible as their smart meters were installed and ready for billing.” BGE, Semi-Annual Report for Third and Fourth Quarters, July 1 through December 31, 2016 in Case No. 9154 at 49 (Jan. 31, 2017).

basis where multiple brands of thermostats are eligible for incentives so long as they meet certain criteria.⁴⁰

CONCLUSION

In conclusion, SACE and CCL generally support DEP's request for approval of Rider 9. DEP's energy savings dropped sharply in 2016, however, and the Company is projecting a further decline in energy savings in future years. If DEP's projections bear out, the Company will be leaving significant energy efficiency opportunities on the table and falling short of the energy savings targets set forth in the Merger Settlement. DEP can and should take steps to improve the performance of efficiency portfolio and ramp up its energy savings in future years. SACE and CCL recommend the following steps:

- 1) DEP should continue to engage with stakeholders while considering ways to improve its existing programs and implement additional cost-effective programs, an expansion of low-income DSM/EE programs, and an enhanced multi-family program;
- 2) DEP should increase its focus in areas that provide more comprehensive and long-lived savings, such as HVAC upgrades and comprehensive home retrofits;
- 3) DEP should develop an enhanced strategy for non-residential programs with an emphasis on increasing the participation of opt-out eligible customers;

⁴⁰ See, e.g., Nest, Partners in Energy, <https://nest.com/blog/2016/04/22/partners-in-energy/> (last accessed Sept. 5, 2017).

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CERTIFICATE OF SERVICE

I hereby certify that the parties listed below have been served via first class U.S. Mail and/or electronic mail with a copy of the Comments of Southern Alliance for Clean Energy and the South Carolina Coastal Conservation League.

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